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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,313	02/28/2002	Michael D. D. Clarke	7099.1626-00	6840

7590 11/30/2004

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EXAMINER

HERNANDEZ, OLGA

ART UNIT	PAPER NUMBER
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2144

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/084,313

Applicant(s)

CLARKE ET AL.

Examiner

Olga Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,15,19-29,32,34,35 and 38 is/are rejected.
- 7) ☒ Claim(s) 2-4,16-18,30,31,33,36,37,39,40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>100704</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 11/09/04 have been fully considered but they are not persuasive. The applicant added the new limitation "plurality of operational and maintenance constraint." FAA regulations require providing maintainance and operational information before any possible flight.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 7-15, 19, 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744).

As per claim 1, 15, Pauly teaches:

- generating an aircraft routing proposal based on information describing a possible flight of an aircraft (abstract);
- determining a proposed flight assignment for the aircraft based on the generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft (abstract).

Pauly does not teach:

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- determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing;
- if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion; and
- generating a flight assignment plan using the proposed flight assignment that meets the decision.

However, Onken teaches:

- determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing (column 3, lines 22-30);
- if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion (column 3, lines 30-37); and
- generating a flight assignment plan using the proposed flight assignment that meets the decision (column 4, lines 57-59).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to automatically correct a change in the flight-relevant parameters and avoid any incident.

As per claims 5 and 19, both Pauly and Onken teach the information describing the possible flight of the aircraft includes *at least one* of flight information, aircraft information and maintenance information. Pauly (column 3) and Onken (abstract).

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As per claims 6 and 20, Onken teaches the flight information includes a destination (column 5, lines 36-55).

As per claims 7, 8, 21 and 22, it would have been obvious (requested by FAA to enhance safety) that the navigation/maintenance data in any aircraft includes current location, remaining flight time, ready time, start time, end time and other kind of information (Onken, column 4, lines 50-65).

As per claims 9 and 23, Onken teaches when approaching the airport, the pilot is instructed to fly a particular heading that deviates from the programmed flight path (column 5, lines 13-25). It would have been obvious that any kind of communication regarding the flight is done by a network, because a network is a communication means that comprises at least two nodes (transmitter and receiver).

3. Claims 10-13, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744) as applied to claim 1 above, and further in view of Nobe et al (5,657,231).

As per claims 10 and 24, neither Pauly nor Onken teach the use of a shortest path algorithm. However, Nobe teaches it in column 2, lines 6-9. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to guide the vehicle to the destination on the basis of the automatically set shortest route so reducing the expenses.

As per claims 11, 12, 13, 25, 26 and 27, Nobe teaches the Dijkstra algorithm in column 2, lines 6-9. Further, it would have been obvious to one of ordinary skill in the art to

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use/implement any kind of algorithm/means that performs the same function in order to improve the response and accuracy of the proposed route. In re Karlson, 136 USPQ 184.

4. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744) as applied to claim 1 above, and further in view of Zweben et al (6,216,109).

As per claims 14 and 28, neither Pauly nor Onken teach the branch and bound method. However, Zweben teaches it in column 4, lines 1-3. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to satisfy certain conditions during the scheduled set of activities.

5. Claims 29, 32, 34, 35, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslin (4,943,919) in view of Onken et al (6,163,744).

As per claims 29 and 35, Aslin teaches:

- receiving information describing a possible flight of an aircraft, wherein the information includes maintenance and operational constraints (the LRU fault data is considered to be the operational constraint) (abstract);
- generating a flight network from the received information (column 11, figures 1 and 2);
- modeling *at least one* of the maintenance and operational constraints (column 12, lines 33-49).

Aslin does not teach determining an aircraft routing proposal for the aircraft that satisfies the received information. However, Onken teaches it in column 4, lines 47-55. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned

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inventions in order to automatically correct a change in the flight-relevant parameters and avoid any incident.

As per claims 32 and 38, it would have been obvious to one of ordinary skill in the art that any maintenance or operational constraint provide a flying time constraint, because no one would take a chance to operate an aircraft without verifying that it is in conditions to flight. So, it takes time to verify that everything is in order to avoid the possibility of an accident.

As per claim 34, Aslin teaches generating an occurrence of scheduled maintenance check constraint (column 1, lines 20-25).

#### ***Allowable Subject Matter***

6. Claims 2-4, 16-18, 30, 31, 33 and 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

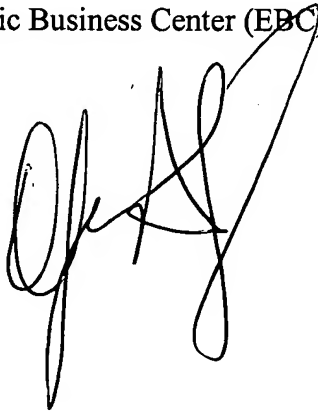
#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Hernandez whose telephone number is (571) 272-7144. The examiner can normally be reached on Monday through Thursday from 6:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on (571) 272-3925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'OH', is written over the word '(EBC)' in the preceding paragraph.

Olga Hernandez  
Examiner  
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